Commentary: A novel surgical approach for apical hypertrophic cardiomyopathy: A new tool in the armamentarium

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Apical hypertrophic cardiomyopathy (HCM) is a variant of HCM in which the hypertrophy of the myocardium predominantly involves the apex of the left ventricle, resulting in reduced left ventricular cavity size and in some cases mid-cavitary obstruction, as opposed to the left ventricular outflow tract obstruction typically seen in HCM.¹⁻⁴ Initially described in Japan, apical HCM has a high prevalence in the Asian population with HCM but is observed less frequently in non-Asian populations.¹⁻⁴ Although apical HCM is generally thought to have a benign course, more recent observations have suggested that it is associated with increased mortality when compared with an age- and sex-matched general population, with age, female sex, and atrial fibrillation being important adverse prognostic characteristics.⁵ For patients with advanced symptoms not responsive to medical management, few surgical therapies, other than heart transplantation, achieve effective relief of symptoms.

In this issue of the *Journal*, Nguyen and colleagues⁶ from the Mayo Clinic in Rochester, Minnesota, describe a unique surgical cohort of 113 patients with advanced heart failure symptoms undergoing myectomy through an apical approach for treatment of apical variant HCM between September 1993 and March 2017. This cohort represented patients with advanced stages of symptoms, with 108 (96%) classified with New York Heart Association class III or IV functional limitations. After myectomy through an apical approach, 76% of patients reported improvement in symptoms at last follow-up, with only 4 patients (4%) dying within 30 days of operation and only 3 patients (3%) requiring subsequent cardiac transplantation for recurrent heart failure. Importantly, in the last decade of the experience, there were no operative deaths. There were 19 late deaths, with estimated 1-, 5-, and 10-year survivals of 96%, 87%, and 74%, respectively. When compared with a national database of heart transplant recipients with a diagnosis of HCM, survival of the patient cohort

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Central Message

Apical myectomy is a novel surgical approach that provides effective relief of advanced heart failure symptoms with low mortality for patients with apical variant hypertrophic cardiomyopathy.

See Article page 145.

who underwent myectomy through an apical approach appeared superior to that of patients with HCM listed for heart transplant.

This recent report from the Mayo group expands on their initial description of the myectomy procedure through an apical approach⁷ and, importantly, establishes this surgical approach as a viable and important treatment option for patients with apical variant HCM. Although these data suggest a durable effect of the procedure for most candidates in terms of symptomatic benefit, the comparison with heart transplantation presented by Nguyen and colleagues⁶ is limited, because baseline characteristics of each cohort, other than age and sex, were not available for rigorous comparison. Further, despite improvement in symptoms, a significant number of patients continued to have advanced symptoms, and functional data on only 36% of the patients were available at a median follow-up of 5 years. More rigorous follow-up data with respect to functional outcomes are therefore needed, particularly when trying to make a strong comparison with heart transplantation. Further, improvements in surgical outcomes reported by Nguyen and colleagues⁶ were achieved on the basis of refinement of the surgical technique and patient selection. It would have been informative if Nguyen and colleagues⁶ had provided further insight into these important issues.

Patients with the apical variant of HCM and advanced symptoms have represented a challenging subset of patients with HCM. Nguyen and colleagues⁶ have provided an alternative surgical approach for this group of patients that cautiously represents an innovative and effective treatment option.

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